COMP50004 Databases and Data Structures

Semester 2 2021

From module descriptor

Assignment 2  
An individual coursework portfolio assessing Learning Outcomes 4 to 5.  
The portfolio (a phased series of tasks) will comprise a series of practical exercises.

Learning Outcomes

4. BE ABLE TO DESIGN, IMPLEMENT, AND DOCUMENT (APPROPRIATELY) EFFICIENT ALGORITHMS

Application  
  
5. EXPLAIN THE STRUCTURE, CORRECT USE OF AND IMPLEMENTATION OF APPROPRIATE ADVANCED DATA STRUCTURES AND ALGORITHMS FOR A RANGE OF SCENARIOS.  
Knowledge and Understanding  
Communication

Learning outcome 4

**Due Friday 20th May 2022**

Scenario

Now that the van loading schedule has been solved, the company is having issues with the van delivery schedule.

The company will like a report on the algorithm that could be used to solve the problem. They are aware of route planning software but are not prepared to pay just get for that alternative. They have suggested that they may employ a developer and are looking for you to produce an outline algorithm to aid them in their decision making process

The report needs to contain

* The data structures needed to store the relevant data
* Sample data needed to generate
  + The route for delivery of the goods
  + A list of grid co-ordinates, goods etc that would act as a backup if their IT failed
* A list of the functionality that would need to be include in the solution
* A basic pseudo code structure to solve the problem
  + With a description of the functions that solve the problem
* Any issues that the pseudo code will not solve
  + Or the limitations of the pseudo code
  + Or functionality deemed to be outside of the algorithms that would need to be included in version 2
* A practical presentation of the algorithm developed in any programming language
* Any assumptions about the scenario (less than 5 stops per run etc.)

Marking Scheme

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| --- | --- |
| Core area | Percentage |
| The data structures needed to store the relevant data | 10% |
| Sample data needed to generate | 5% |
| A list of the functionality that would need to be include in the solution | 10% |
| A basic pseudo code structure to solve the problem | 40% |
| Any issues that the pseudo code will not solve | 5% |
| A practical presentation of the algorithm developed in any programming language | 25% |
| Any assumptions about the scenario | 5% |